

What is claimed is:

1. A driving circuit comprising:

a first current mirror circuit which outputs a plurality of output currents each of which corresponds to a reference current; and

5 a second current mirror circuit which converts a polarity of an output current outputted from a final stage of said first current mirror circuit and outputs the converted output current.

2. The driving circuit according to claim 1,

wherein said first current mirror circuit comprising:

a reference current input terminal to which said reference current is supplied;

5 a power supply terminal to which power is supplied;

a first circuit provided between said reference current input terminal and said power supply terminal, to determine said plurality of output currents;

10 a common power supply line which extends from said power supply terminal;

a plurality of output terminals;

a plurality of second circuits provided between said common power supply line and said plurality of  
15 output terminals, to output a part of said plurality of output currents determined by said first circuit

through said plurality of output terminals; and

a third circuit provided at a next stage of said plurality of second circuits as said final stage of said first current mirror circuit, to output said  
20 output current determined by said first circuit.

3. The driving circuit according to claim 2,  
wherein said second current mirror circuit converts  
said polarity of said output current outputted from  
said third circuit and outputs said converted output  
5 current through a reference current output terminal.

4. The driving circuit according to claim 3,  
wherein said first circuit, said second circuits and  
said third circuit included in said first current  
mirror circuit are constituted by PNP transistors, and  
5 said second current mirror circuit is constituted by  
NPN transistors.

5. The driving circuit according to claim 4,  
wherein at least one of said first circuit and said  
second current mirror circuit has a base current  
compensating circuit.

6. The driving circuit according to claim 3,  
wherein said first circuit, said second circuits and  
said third circuit included in said first current

mirror circuit are constituted by P-channel MOS

5 transistors, and

said second current mirror circuit is  
constituted by N-channel MOS transistors.

7. The driving circuit according to claim 5,  
wherein said power supply terminal is pulled out from  
a center of said common power supply line.

8. The driving circuit according to claim 5,  
wherein said power supply terminal is pulled out from  
a plurality of positions of said common power supply  
line.

9. The driving circuit according to claim 1,  
wherein said first current mirror circuit comprising:  
a reference current input terminal to which said  
reference current is supplied;

5 a ground terminal which is connected to a  
ground;

a first circuit provided between said reference  
current input terminal and said ground terminal, to  
determine said plurality of output currents;

10 a common ground line which extends from said  
ground terminal;

a plurality of output terminals;

a plurality of second circuits provided between

said common ground line and said plurality of output  
15 terminals, to output a part of said plurality of  
output currents determined by said first circuit  
through said plurality of output terminals; and  
a third circuit provided at a next stage of said  
plurality of second circuits as said final stage of  
20 said first current mirror circuit, to output said  
output current determined by said first circuit.

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10. The driving circuit according to claim 9,  
wherein said second current mirror circuit converts  
said polarity of said output current outputted from  
said third circuit and outputs said converted output  
5 current through a reference current output terminal.

11. The driving circuit according to claim 10,  
wherein said first circuit, said second circuits and  
said third circuit included in said first current  
mirror circuit are constituted by NPN transistors, and  
5 said second current mirror circuit is constituted by  
PNP transistors.

12. The driving circuit according to claim 11,  
wherein at least one of said first circuit and said  
second current mirror circuit has a base current  
compensating circuit.

13. The driving circuit according to claim 10,  
wherein said first circuit, said second circuits and  
said third circuit included in said first current  
mirror circuit are constituted by N-channel MOS

5 transistors, and

said second current mirror circuit is constituted by  
P-channel MOS transistors.

14. The driving circuit according to claim 12,  
wherein said ground terminal is pulled out from a  
center of said common ground line.

15. The driving circuit according to claim 12,  
wherein said ground terminal is pulled out from a  
plurality of positions of said common ground line.

16. A constant current driving apparatus comprising  
a plurality of driving circuits connected through  
terminals in series, each of which comprises:

a first current mirror circuit which outputs a  
5 plurality of output currents each of which corresponds  
to a reference current; and

a second current mirror circuit which converts a  
polarity of an output current outputted from a final  
stage of said first current mirror circuit and outputs  
10 the converted output current.

17. The constant current driving apparatus according to claim 16, wherein said first current mirror circuit comprising:

a reference current input terminal to which said  
5 reference current is supplied;

a power supply terminal to which power is  
supplied;

a first circuit provided between said reference  
current input terminal and said power supply terminal,  
10 to determine said plurality of output currents;

a common power supply line which extends from  
said power supply terminal;

a plurality of output terminals;

a plurality of second circuits provided between  
15 said common power supply line and said plurality of  
output terminals, to output a part of said plurality  
of output currents determined by said first circuit  
through said plurality of output terminals; and

a third circuit provided at a next stage of said  
20 plurality of second circuits as said final stage of  
said first current mirror circuit, to output said  
output current determined by said first circuit.

18. The constant current driving apparatus according to claim 17, wherein said second current mirror circuit converts said polarity of said output current outputted from said third circuit and outputs said

5 converted output current through a reference current output terminal.

19. The constant current driving apparatus according to claim 18, wherein said first circuit, said second circuits and said third circuit included in said first current mirror circuit are constituted by PNP

5 transistors, and said second current mirror circuit is constituted by NPN transistors.

20. The constant current driving apparatus according to claim 19, wherein at least one of said first circuit and said second current mirror circuit has a base current compensating circuit.

21. The constant current driving apparatus according to claim 18, wherein said first circuit, said second circuits and said third circuit included in said first current mirror circuit are constituted by P-channel

5 MOS transistors, and

said second current mirror circuit is constituted by N-channel MOS transistors.

22. The constant current driving apparatus according to claim 16, wherein said first current mirror circuit comprising:

a reference current input terminal to which said

5 reference current is supplied;

a ground terminal which is connected to a  
ground;

a first circuit provided between said reference  
current input terminal and said ground terminal, to  
10 determine said plurality of output currents;

a common ground line which extends from said  
ground terminal;

a plurality of output terminals;

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to claim 23, wherein said first circuit, said second circuits and said third circuit included in said first current mirror circuit are constituted by NPN

5 transistors, and said second current mirror circuit is constituted by PNP transistors.

25. The constant current driving apparatus according to claim 24, wherein at least one of said first circuit and said second current mirror circuit has a base current compensating circuit.

26. The constant current driving apparatus according to claim 23, wherein said first circuit, said second circuits and said third circuit included in said first current mirror circuit are constituted by N-channel

5 MOS transistors, and said second current mirror circuit is constituted by P-channel MOS transistors.